

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 5/24/2010 has been entered.

2. It is noted that (a) although claims 37-48 are new, Mocchia, previously applied against now canceled claims 17-20, 22-23, and 32, remains a relevant reference against the newly added claims and (b) upon updating the search, new relevant references, Dunn and Herbst, were uncovered which are applied against the pending claims in the rejections set forth below.

Claim Objections

3. Claim 45 is objected to because of the following informalities: Claim 45 depends on itself, i.e., "a method according to claim 45 wherein said formaldehyde emanates from paraformaldehyde". However from the subject matter recited in the claim it appears that claim 45 should depend on claim 44. Appropriate correction is required.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

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A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 37, 39-40, and 47 are rejected under 35 U.S.C. 102(b) as being anticipated by Dunn (US 5,736,591) as evidenced by Bekele (US 2002/0182236).

Regarding claim 37, 39-40, and 47, Dunn discloses a method of adding silver salts, .i.e., silver chloride, silver nitrate, etc. to latex (a composition containing thermoplastic polymers, those based on α -olefin or acrylic monomers, etc, water, and an emulsifier) (Column 1 Lines 64-67, Column 2 Lines 3-6 and Lined 40-51, Column 3 Lines 30-34). The silver compounds are added in amount from 0.0002 to 0.001 parts (2 ppm to 10 ppm) (Column 3 Lines 44-45). It is noted that the amount disclosed by Dunn overlaps the amount of 0.00003 to 0.001 parts recited in claim 37. Given the disclosure by the reference that latex is utilized in paints, it is clear that the latex composition disclosed by the reference is a coating composition such as a paint as recited in claim 47 (Column 1 Lines 5-111).

It is noted that although the reference discloses that the silver compounds are bactericides, it is the Examiner's position that the silver compounds disclosed by Dunn inherently possess antiviral properties. Evidence supporting the Examiner's position is found on Page 9 [0104] of Bekele which discloses metal salts, e.g. silver nitrate, as compounds possessing antiviral properties.

The recitation in the claims "of obtaining a SARS corona virus antiviral effect" is merely an intended use. Applicants attention is drawn to MPEP 2111.02 which states that intended use statements must be evaluated to determine whether the intended use results in a structural difference between the claimed invention and the prior art. Only if such structural difference

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exists, does the recitation serve to limit the claim. If the prior art structure is capable of performing the intended use, then it meets the claim.

It is the Examiner's position that the intended use recited in the present claims does not result in a structural difference between the presently claimed invention and the prior art and further that the prior art structure is capable of performing the intended use. Given that Dunn discloses a method of adding silver to latex composition as presently claimed, it is clear that the method of the reference would be capable of performing the intended use, i.e. obtaining a SARS corona virus antiviral effect, presently claimed as required in the above cited portion of the MPEP, and thus, one of ordinary skill in the art would have arrived at the claimed invention.

In light of the above, it is clear that Dunn as evidenced by Bekele anticipates the presently recited claims.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.

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2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

8. Claim 38 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dunn (US 5,736,591) in view of Bekele (US 2002/0182236).

The discussion with respect to Dunn and Bekele as set forth in Paragraph 5 above is incorporated here by reference.

Regarding claim 38, the combined disclosures of Dunn and Bekele teach all the claim limitations as set forth above. As discussed above, Dunn discloses that silver compounds comprise 0.0002 parts to 0.001 parts (2 ppm to 10 ppm) of the latex composition, which overlaps the amount of 0.00005 to 0.0008 parts recited in the present claim.

Regarding the amount of silver compound disclosed by Dunn, it is well settled that where the prior art describes the components of a claimed compound or compositions in concentrations within or overlapping the claimed concentrations a prima facie case of obviousness is established. See *In re Harris*, 409 F.3d 1339, 1343, 74 USPQ2d 1951, 1953 (Fed. Cir 2005); *In re Peterson*, 315 F.3d 1325, 1329, 65 USPQ 2d 1379, 1382 (Fed. Cir. 1997); *In re Woodruff*, 919 F.2d 1575, 1578 16 USPQ2d 1934, 1936-37 (CCPA 1990); *In re Malagari*, 499 F.2d 1297, 1303, 182 USPQ 549, 553 (CCPA 1974). Therefore, it would have been obvious to one of ordinary skill in the art, absent evidence to the contrary to utilize the amount of silver compounds disclosed by the Dunn including that presently claimed.

9. Claims 37-38, 40-43, 46, and 48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mocchia et al (WO 2001/79349) in view of Lewis (see pages of *Hawley's*

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Condensed Chemical Dictionary attached to previous Office Action) and *Dorland's Illustrated Medical Dictionary* (see pages attached to previous Office Action).

Regarding claims 37-38, 40-41, and 46, Mocchia et al discloses a method of adding antiseptic silver compounds, i.e. silver salts or silver complexes to urea formaldehyde for molding compositions (Page 2, Lines 8-10, Lines 14-19 and Lines 30-33). Regarding the amounts of silver compounds, the reference discloses that these compounds are utilized in amounts from 0.0001 to 10 parts (Page 3 Lines 30-33). It is noted that the amount disclosed by Mocchia overlaps the amount of 0.00003 to 0.001 parts recited in claim 37 and 0.00005 to 0.0008 parts recited in claim 38.

Regarding the amount of silver compound disclosed by Mocchia, it is well settled that where the prior art describes the components of a claimed compound or compositions in concentrations within or overlapping the claimed concentrations a prima facie case of obviousness is established. See *In re Harris*, 409 F.3d 1339, 1343, 74 USPQ2d 1951, 1953 (Fed. Cir 2005); *In re Peterson*, 315 F.3d 1325, 1329, 65 USPQ 2d 1379, 1382 (Fed. Cir. 1997); *In re Woodruff*, 919 F.2d 1575, 1578 16 USPQ2d 1934, 1936-37 (CCPA 1990); *In re Malagari*, 499 F.2d 1297, 1303, 182 USPQ 549, 553 (CCPA 1974). Therefore, it would have been obvious to one of ordinary skill in the art, absent evidence to the contrary to utilize the amount of silver compounds disclosed by the Mocchia including that presently claimed.

Regarding the silver compound disclosed by Mocchia, while the reference refers to these compounds as being "antiseptic", as evidenced by Lewis an antiseptic is a compound that retards or stops the growth of microorganisms. The term "microorganism" as defined by *Dorland's Illustrated Medical Dictionary* (see Page 882) encompasses viruses, i.e. "a minute living

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organism", including "bacteria, rickettsiae, viruses molds, yeasts, and protozoa". Hence it is clear that although Mocchia disclose silver compounds as antiseptic, the compounds disclosed by the reference inherently function as antiviral compounds.

The recitation in the claims "of obtaining a SARS corona virus antiviral effect" is merely an intended use. Applicants attention is drawn to MPEP 2111.02 which states that intended use statements must be evaluated to determine whether the intended use results in a structural difference between the claimed invention and the prior art. Only if such structural difference exists, does the recitation serve to limit the claim. If the prior art structure is capable of performing the intended use, then it meets the claim.

It is the Examiner's position that the intended use recited in the present claims does not result in a structural difference between the presently claimed invention and the prior art and further that the prior art structure is capable of performing the intended use. Given that Mocchia discloses a method of adding antiseptic compounds to polymers as presently claimed, it is clear that the method of the reference would be capable of performing the intended use, i.e., obtaining a SARS corona virus antiviral effect, presently claimed as required in the above cited portion of the MPEP, and thus, one of ordinary skill in the art would have arrived at the claimed invention.

Regarding claims 42-43, the combined disclosures of Mocchia, Lewis, and *Dorland's Illustrated Medical Dictionary* teach all the claim limitations as set forth above. Additionally, Mocchia discloses a method utilizing a filler, specifically cellulose (Page 2, Lines 8-10).

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Regarding claim 48, the combined disclosures of Mocchia, Lewis, and *Dorland's Illustrated Medical Dictionary* teach all the claim limitations as set forth above. Additionally, Mocchia discloses molded articles such as sanitary articles, kitchenware articles, tableware, ornamental article, eletrotechnology components, etc (Page 1, Lines 13-30)

10. Claim 44 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mocchia et al (WO 2001/79349), Lewis (see pages of *Hawley's Condensed Chemical Dictionary* attached to previous Office Action), and *Dorland's Illustrated Medical Dictionary* (see pages attached to previous Office Action) as applied to claims 37-43, 46, and 48 above, and in view of *United States Department of Labor, Occupational Safety & Health Administration (OSHA)* (see attached pages to previous Office Action).

The discussion with respect to Mocchia et al, Lewis, and *Dorland's Illustrated Medical Dictionary* as set forth in Paragraph 9 above is incorporated here by reference.

Regarding claim 44, the combined disclosures of Mocchia et al, Lewis, and *Dorland's Illustrated Medical Dictionary* teach all the claim limitations as set forth above. It is noted that although Mocchia does not disclose that the urea-formaldehyde resin releases formaldehyde, it is the Examiner's position that the resin disclosed by the reference is capable of releasing formaldehyde. Evidence supporting this position is found on Page 1 of *United States Department of Labor Occupational Safety & Health Administration* reference which discloses that urea-formaldehyde resin comprise un-reacted formaldehyde residues which may be released from products comprising said resin.

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11. Claims 37-43, 46, and 48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Herbst et al (US 2003/0125413) in view of *Dorland's Illustrated Medical Dictionary* (see pages attached to previous Office Action).

Regarding claims 37-41 and 46, Herbst discloses a method of adding a combination of inorganic and organic antimicrobial compounds to thermoplastic polymers utilized in forming molded articles (Page 1 [0008], [0011]-[0012], [0022], Page 2 [0039], Page 7 [0089], [0093], and [00104]). The reference discloses thermoplastic polymers such as polyethylene, polypropylene, and amino resins such as phenol/formaldehyde, urea-formaldehyde, and melamine formaldehyde resins (Page 7 [0089] [0093], Page 9 [0112]). As inorganic antimicrobial compounds the reference discloses silver nitrate, silver sulfate, silver chloride, and silver complexes (Page 1 [0022]). The amount of silver compound disclosed by the reference is 0.0005 to 9 parts which is determined based on the disclosure that inorganic and organic antimicrobial compounds are utilized in amounts from 0.005 to about 10 wt % and a ratio of about 1:9 to about 9:1 (organic to inorganic) (Page 9 [00127]). It is noted that the amount disclosed by Herbst overlaps the amount of 0.00003 to 0.001 parts recited in claim 37 and 0.00005 to 0.0008 parts recited in claim 38.

Regarding the amount of silver compound disclosed by Herbst, it is well settled that where the prior art describes the components of a claimed compound or compositions in concentrations within or overlapping the claimed concentrations a prima facie case of obviousness is established. See *In re Harris*, 409 F.3d 1339, 1343, 74 USPQ2d 1951, 1953 (Fed. Cir 2005); *In re Peterson*, 315 F.3d 1325, 1329, 65 USPQ 2d 1379, 1382 (Fed. Cir. 1997); *In re Woodruff*, 919 F.2d 1575, 1578 16 USPQ2d 1934, 1936-37 (CCPA 1990); *In re Malagari*, 499 F.2d 1297, 1303, 182 USPQ 549, 553 (CCPA 1974). Therefore, it would have been obvious to

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one of ordinary skill in the art, absent evidence to the contrary to utilize the amount of silver compounds disclosed by the Herbst including that presently claimed.

While Herbst et al refers to the silver compound as being antimicrobial and does not explicitly disclose "antiviral", the Examiner's position remains that the silver compounds disclosed by the reference will have antiviral properties. Evidence to support the Examiner's position is found in Page 92 of *Dorland's Illustrated Medical Dictionary* which defines the term "antimicrobial" as "an agent that kills microorganisms or suppresses their multiplication or growth". Furthermore, Page 822 of the same reference goes on to define the term "microorganism" as a "minute living organism", including "bacteria, rickettsiae, viruses, molds, yeasts, and protozoa". Hence it is the Examiner's position, absent evidence to the contrary that the silver antimicrobial compounds disclosed by Herbst et al will inherently function as antiviral compounds.

The recitation in the claims "of obtaining a SARS corona virus antiviral effect" is merely an intended use. Applicants attention is drawn to MPEP 2111.02 which states that intended use statements must be evaluated to determine whether the intended use results in a structural difference between the claimed invention and the prior art. Only if such structural difference exists, does the recitation serve to limit the claim. If the prior art structure is capable of performing the intended use, then it meets the claim.

It is the Examiner's position that the intended use recited in the present claims does not result in a structural difference between the presently claimed invention and the prior art and further that the prior art structure is capable of performing the intended use. Given that Herbst discloses a method of adding antiseptic compounds to polymers as presently claimed, it is clear

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that the method of the reference would be capable of performing the intended use, i.e., obtaining a SARS corona virus antiviral effect, presently claimed as required in the above cited portion of the MPEP, and thus, one of ordinary skill in the art would have arrived at the claimed invention.

Regarding claims 42-43, the combined disclosures of Herbst, and *Dorland's Illustrated Medical Dictionary* disclose all the claim limitations as set forth above. Additionally, Herbst discloses fillers such as glass fiber, wood, flour, and mica (Page 7 [0085]).

Regarding claim 48, the combined disclosures of Herbst, and *Dorland's Illustrated Medical Dictionary* disclose all the claim limitations as set forth above. Additionally, Herbst discloses molded articles including ornamental articles such as hand rails, door handles, etc (Page 2 [0037]).

12. Claim 44 is rejected under 35 U.S.C. 103(a) as being unpatentable over Herbst et al (US 2003/0125413) and *Dorland's Illustrated Medical Dictionary* (see pages attached to previous Office Action) as applied to claims 37-43, 46, and 48 above, and in view of *United States Department of Labor, Occupational Safety & Health Administration (OSHA)* (see attached pages to previous Office Action).

The discussion with respect to Herbst et al and *Dorland's Illustrated Medical Dictionary* as set forth in Paragraph 11 above is incorporated here by reference.

Regarding claim 44, the combined disclosures of Herbst et al and *Dorland's Illustrated Medical Dictionary* teach all the claim limitations as set forth above. It is noted that although

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Herbst does not disclose that the urea-formaldehyde resin releases formaldehyde, it is the Examiner's position that the resin disclosed by the reference is capable of releasing formaldehyde. Evidence supporting this position is found on Page 1 of *United States Department of Labor Occupational Safety & Health Administration* reference which discloses that urea-formaldehyde resin comprise un-reacted formaldehyde residues which may be released from products comprising said resin.

13. Claims 44-45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Herbst et al (US 2003/0125413) and *Dorland's Illustrated Medical Dictionary* (see pages attached to previous Office Action) as applied to claims 37-43, 46, and 48 above, and in view of Taylor et al (see attached pages of *Paraformaldehyde for Surface Sterilization and Detoxification*) and Alger (see attached pages of *Polymer Science Dictionary*).

The discussion with respect to Herbst et al and *Dorland's Illustrated Medical Dictionary* as set forth in Paragraph 11 above is incorporated here by reference.

Regarding claims 44-45, the combined disclosures of Herbst et al and *Dorland's Illustrated Medical Dictionary* teach all the claim limitations as set forth above. Additionally, it is noted that Herbst discloses polyoxymethylene polymer which as evidenced by Alger is also known in the art as paraformaldehyde or polyformaldehyde polymer (see Pages 359 and 436 of Alger). It is noted that although Herbst does not disclose that polyoxymethylene is capable of releasing formaldehyde from paraformaldehyde, it is the Examiner's position that the resin disclosed by the reference will inherently release formaldehyde. Evidence to support this

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position is found on Page 614 Column 2 of Taylor which discloses that paraformaldehyde when heated depolymerizes and releases formaldehyde gas.

Response to Arguments

14. Applicant's arguments filed 5/24/2010 have been fully considered but they are not persuasive.

15. Applicant argues that none of the cited prior art shows an anti- SARS corona virus effect in a molded or coated product where the active ingredient is used in an amount as little as 0.0003 parts by weight. However, it is noted that while Mocchia does not disclose amounts as little as 0.00003 parts by weight of silver complexes or salts in molded products, the reference does disclose amounts in the range from 0.0001 to 10 parts which overlaps the range of 0.0003 to 0.001 parts recited in claims 37 and 0.0005 to 0.0008 recited in claim 38. Furthermore, it is noted that as set forth above, Dunn discloses latex coatings or paints utilizing silver salts in amounts of 0.0002 to 0.001 parts (2 ppm to 10 ppm). Finally, while Mocchia and Dunn do not disclose that silver salts or complexes have an anti SARS corona virus effect, it is noted that (a) in the rejections set forth above, the Examiner has provided evidentiary references supporting the position that the complexes disclosed by the references inherently function as anti-viral agents and (b) the recitation in the claims of a "method of obtaining a SARS corona virus antiviral effect" is merely an intended use. Applicants attention is drawn to MPEP 2111.02 which states that intended use statements must be evaluated to determine whether the intended use results in a structural difference between the claimed invention and the prior art. Only if such structural

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difference exists, does the recitation serve to limit the claim. If the prior art structure is capable of performing the intended use, then it meets the claim.

It is the Examiner's position that the intended use recited in the present claims does not result in a structural difference between the presently claimed invention and the prior art and further that the prior art structure is capable of performing the intended use. Given that Mocchia discloses a method of adding antiseptic compounds to polymers as presently claimed, it is clear that the method of the reference would be capable of performing the intended use, i.e., obtaining a SARS corona virus antiviral effect, presently claimed as required in the above cited portion of the MPEP, and thus, one of ordinary skill in the art would have arrived at the claimed invention.

Conclusion

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to ALEXANDER C. KOLLIAS whose telephone number is (571)-270-3869. The examiner can normally be reached on Monday-Friday, 8:00 AM -5:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on (571)-272-1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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/A. C. K./

Examiner, Art Unit 1796

/Vasu Jagannathan/

Supervisory Patent Examiner, Art Unit 1796